

# SLIDER CURVATURE MODIFICATION BY SUBSTRATE MELTING EFFECT

## PRODUCED WITH A PULSED LASER BEAM

### ABSTRACT OF THE INVENTION

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A method and apparatus for producing very high crown and camber curvature in slider materials using a laser processing system which produces fluence which is variable in a controllable manner, by applying a laser beam to the flex side of the slider material and varying the fluence of the laser beam to optimize the curvature in the slider material. The fluence is variable by finely controlling the power output of the laser or by changing the spot size of the laser beam. The beam spot size can be changed by using a focusing lens to establish a focal plane and then varying the relative positions of the slider relative and the focal plane.

An apparatus for producing high crown and camber is also disclosed, as well as a slider produced by the process of applying a laser beam to the flex side of the slider material and varying the fluence of the laser beam to optimize the curvature in the slider material.

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10 laser system  
12 pulsed laser  
14 laser beam  
15 expanded laser beam  
16 movable mirror  
18 mirror stage  
19 adjustable beam expander  
20 lens  
22 lens stage  
24 substrate  
26 slider flex side  
28 slider  
30 slider stage  
32 computer controller  
34 focal plane  
36 crown  
38 row of sliders  
40 leading edge  
42 trailing edge  
44 horizontal scribed lines  
46 initial crown  
48 final crown  
50 vertical scribed lines  
52 initial camber  
54 final camber